Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

NEW APPLICATION TRANSMITTAL LETTER

Transmitted herewith for filing is the [X] utility or [ ] design patent application of Inventor(s):

    (1)   Makoto YOSHIOKA

    (2)   Haruhiko TSUNODA

    (3)   Kazuhara HASEGAWA

    (4)   Hidefumi AOE

    Entitled: CONTENT SALES PERIOD VERIFYING SYSTEM AND CONTENT DECRYPTION KEY EFFECTIVE PERIOD VERYIFYING SYSTEM

Enclosed are:

1.   The papers required for filing date under 37 C.F.R. §1.53(b):

    35   page(s) of specification

    01   page(s) of Abstract

    06   page(s) of claim(s)

    04   sheet(s) of [x] formal or [] informal drawings

2.   [x]   Combined Declaration/Power of Attorney

3.   Assignment

    [x]   An assignment of the invention to: FUJITSU LIMITED

4.   Claim for Priority Under 35 U.S.C. §120

    []   The benefit under 35 U.S.C. §120 is hereby claimed from the following U.S. application(s):

U.S. Patent Application Serial No.
Filed:

5.   Claim for Priority Under 35 U.S.C. §119

     [X]   The benefit of priority under 35 U.S.C. §119 is hereby claimed from the following foreign application(s):

     Japanese Appln. No. 7-242125, filed September 20, 1995.

     [x]   A certified copy of each of the above-identified foreign application(s) is/are enclosed.

6.   Claim Calculation

	CLAIMS AS FILED					
	Originally Filed Claims	Highest Number Allowed		Present Extra		Additional Fee
Total Claims	09	20	=	0	X $22	0
Independent Claims	03	03	=	0	X $78	0
					Basic Filing Fee:	750.00
					TOTAL FEES ENCLOSED:	750.00

    []   Amendment cancelling extra claims enclosed

    []   Amendment deleting multiple dependencies enclosed

7.   Small Entity Statement

    []   A verified statement that this is a filing by a
         "small entity" under 37 C.F.R. §1.9 and §1.27 is attached.

               Filing Fee Calculation (50% of above)

8.   Fee Payment

    [ ]   Not enclosed

    [ ]   No filing fee is to be paid at this time.

    [x]   Enclosed

| [x] | Filing fee calculation above | $750.00 |
| [x] | Recording Assignment ($40.00; 37 C.F.R. §1.21(h)(1)) | $40.00 |

TOTAL FEES ENCLOSED $790.00

9.   Method of Payment of Fees

[x]   Check in the amount of $790.00

[ ]   Charge Deposit Account No. 19-3935 in the amount of $
       A duplicate of this transmittal letter is attached.

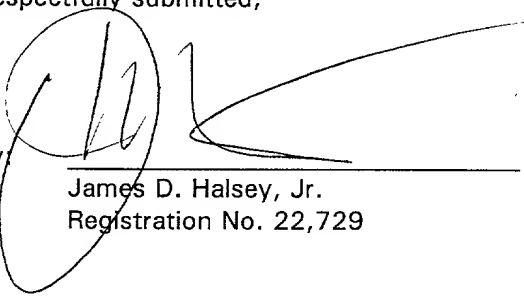10.   Authorization to Credit Overpayment or Charge Additional Fees

[X]   The Commissioner is hereby authorized to credit any overpayment, or charge fees under 37 C.F.R. §1.16 (filing fees) or 37 C.F.R. §1.17 (application processing fees) which may be required, to Deposit Account No. 19-3935.

11.   Correspondence Address:

> STAAS & HALSEY
> 700 Eleventh Street, N.W.
> Suite 500
> Washington, D.C. 20001
> (202) 434-1500

> Respectfully submitted,
>
> By
> James D. Halsey, Jr.
> Registration No. 22,729

STAAS & HALSEY
700 Eleventh Street, N.W.
Suite 500
Washington, D.C. 20001
(202) 434-1500
Date: May 13, 1996

CONTENT SALES PERIOD VERIFYING SYSTEM AND CONTENT

DECRYPTION KEY EFFECTIVE PERIOD VERIFYING SYSTEM

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to a content sales period verifying system and a content decryption key effective period verifying system in a content sales system for selling contents on line.

DESCRIPTION OF THE RELATED ART

With a widespread use of CD-ROM drives, a content such as a film, musical work, computer program, database, etc., in the form of software and defined as digital data is frequently distributed through a CD-ROM medium. The CD-ROM medium can be manufactured at low costs and has a large capacity exceeding 500 MB. In addition, CD-ROM drives are decreasing in price and increasing in speed. Further, the CD-ROM is comparatively lightweight and thin for its storage capacity and, therefore, can be distributed by various methods, including being interposed in a magazine for distribution or other uses.

The content of the CD-ROM is stored as digital data, therefore the content can be illegally copied and installed (the term "install" herein connotes an introduction of the content into a disk device of a personal computer). Accordingly, when distributing the content of the CD-ROM, illegal copying and installation must be prevented.

Accordingly, the following has hitherto been practiced to date. In distributing the content by CD-ROM, several types of trial version contents and an encrypted real content are recorded on the CD-ROM, and thus distributed. Only a user paying a using charge (which is a one-time payment) for the content is supplied with a key for decrypting the encrypted real content, permitting the user to use the real content. For the purpose of explanation, the phrase "supplying the key in exchange of the payment of the using charge for the content" is expressed such as "selling the content".

By the way, in the traditional over-the-counter selling of the contents, there must be several cases where the contents are sold with a predetermined limit of a sales period as in the case of weekly and monthly magazines or seasoning goods, where the sales of unpopular

contents are discontinued, and where the sales of old versions are terminated due to a version-up of the computer program. It is therefore desired that the content sales system should meet those cases even when selling the contents in the form of the digital data. Namely, it is desirable to construct a novel content sales system capable of previously setting a sales period for which the contents can be sold and newly setting or shortening a sales period depending on circumstances after a start of sales.

The conventional content sale system employing the CD-ROM is, however, not able to meet the cases described herein above.

SUMMARY OF THE INVENTION

A primary object of the present invention, which was contrived to respond the above requests, is to provide a content sales period verifying system and a content decryption key effective period verifying system that are capable of restricting a content sales period in a content distribution system for selling contents on line.

To overcome the above-mentioned problems, the present invention adopts the following constructions.

A content sales period verifying system according to the present invention is a system in a content distribution system in which a center sells a content in response to a request for purchasing the content given from a terminal. The terminal may comprise *a* sales period reading section for reading a sales period set on the content, a present time data generating section for generating present time data indicating present time, a comparing section for comparing the sales period read by the sales period reading section with the present time indicated by the present time data generated by the present time data generating section, and a purchase requesting section for requesting the center for purchasing the content when the comparing section judges that the present time falls within the sales period.

According to the content sales period verifying system of the present invention, the sales period reading section reads the sales period set on the content. The present time data generating section generates the present time data indicating the present time. The comparing section compares those sales periods with the present time indicated by the present time data. Then, the purchase requesting section requests the center for purchasing the

content. Accordingly, the terminal never requests the center for purchasing the content of which sales period has elapsed.

Herein, the content is defined as software including a program, musical data and video data of a movie, etc.. The content may be provided both in an analog form and in a digital form.

The content may be supplied to a user from the center in response to the purchase request or may be supplied to the user in a previously encrypted status. In the latter case, the center supplies the key for decrypting the encrypted content to the user in response to the purchase request from the user. In the content distribution system in the latter case, a single piece of medium stores a plurality of encrypted contents, each set with the sales periods thereof. Then, the terminal making the request for purchasing one of those contents is supplied with the key for decrypting this content. Based on such a construction, a great quantity of contents can be sold through simple communications between the terminals and the center. In this case, the effective period of the medium itself may be set on the medium storing the content. Herein, the terminal may further comprise an

effective period reading section for reading the effective period of the medium itself. Then, the comparing section compares the effective period of the medium itself that is read by the effective period reading section with the present time indicated by the present time data generated by the present time data generating section. The purchase requesting section requests the center for the purchase when the comparing section judges that the present time falls within the sales period and is anterior to end of the effective period of the medium itself. With this construction, the period for which the center must deal with the medium is automatically confined, and hence the operations in the center can be simplified.

The center may comprise a database registered with the sales period set on each content, a database reading section for reading the sales period of the content from the database when the terminal makes the request for purchasing one of the contents, a determining section for determining whether the present time falls within the sales period read by the database reading section, and a key supplying section for supplying the terminal with a key for decrypting the content when the determining section determines that the preset time falls within the

sales period. With this construction, even if the present time data generating section of the terminal does not generate the precise present time data, the center is capable of checking the sales period of the content requested for purchasing and rejecting the sales of the content of which sales period has elapsed.

Further, the center may comprise a database registered with the effective period of the medium itself and the sales period set on each content, a database reading means for reading the effective period of the medium itself and the content sales period from the database, a determining section for determining whether the present time is anterior to end of the effective period read by the database reading section, and whether the present time falls within the sales period read by the database reading section, and a key supplying section for supplying the terminal with a key for decrypting the content when the determining section determines that the present time is anterior to the end of the effective period and falls within the sales period. With this construction, even if the present time data generating section of the terminal does not generate the precise present time data, the center is capable of checking the

sales period of the content requested for the purchasing and the effective period of the medium and also rejecting the sales of the content of which sales period or the effective period of the medium itself has elapsed.

The center may further comprise a period data adding section for generating period data indicating an effective period of the key and adding this item of period data to the key supplied to the terminal by the key supplying section. In this case, the terminal may further comprise a second comparing section for comparing the key effective period indicated by the period data with the present time indicated by the present time data generated by the present time data generating section, and a decrypting section for decrypting the content requested for the purchasing when the second comparing section judges that the present time falls within the key effective period. If constructed in this way, the period data adding section of the center is capable of setting the key effective period regardless of the content sales period and the medium effective period. Accordingly, even on the verge of a termination of the content sales period, or when the purchase request is made on the verge of a termination of the medium effective period, the effective period can be

set so that the content can be decrypted with an

allowance.

In this case, the terminal may further comprise a

disk device for storing the contents, and an installing

section for installing the content decrypted by the

decrypting section into the disk device.

On the other hand, a content decryption key effective

period verifying system may be a system in a content

distribution system for distributing encrypted contents

and supplying terminals making requests for purchasing a

content with key for decrypting the content. A center may

comprise a period data adding section for generating

period data indicating a key effective period and adding

the period data to the key. The terminal may comprise a

present time data generating section for generating

present time data indicating a present time, a comparing

section for comparing the key effective period indicated

by the period data with the present time indicated by the

present time data generated by the present time data

generating section, and a decrypting section for

decrypting the content requested for the purchasing when

the comparing section judges that the present time falls

within the key effective period.

According to the content decryption key effective period verifying system of the present invention, the period data adding section of the center generates the period data indicating the effective period of the key and adds this item of period data to the key. On the other hand, the present time data generating section of the terminal generates the present time data indicating the present time. Then, in response to the sending of the period data, the comparing section compares the key effective period indicated by the period data with the present time indicated by the present time data generated by the present time data generating section. The decrypting section decrypts the encrypted content requested for purchasing when the comparing section judges that the present time falls within the key effective period.

These together with other objects and advantages which will be subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying drawings, in which:

Figure 1 is a schematic diagram showing a content distribution system in an embodiment of the present invention;

Figure 2 is a block diagram illustrating a detailed configuration of a personal computer 6 and an SD center 1 shown in Figure 1;

Figure 3 is a flowchart showing control processes executed by the personal computer; and

Figure 4 is a flowchart showing control processes executed by the SD center.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention is discussed herein below with reference to the accompanying drawings.

<Outline of Content Distribution System>

Figure 1 is a block diagram illustrating an outline of a content distribution system in which the present invention is embodied. Referring to Figure 1, an SD

center 1 is equipment serving as a center of the content

distribution system. An operator operating the SD center

1 may be also an enterpriser or entrepreneur of a content

distribution enterprise utilizing this content

distribution system. The operator in the SD center 1

enters into a content accept contract with a provider 2

for a variety of contents. The SD center 1 accepts the

contents from the provider 2 on the basis of this content

accept contract. Then, the operator operating the SD

center 1 enters into a sales contract with respect to

contents determined for sales among those accepted and

distributes part of proceeds of the sold contents to the

providers 2. Further, as need be, the operator of the SD

center 1 enters into sales contracts with rightful

claimants 3 other than the providers 2 and distributes

part of the proceeds in accordance with that sales

contract.

The SD center 1 encrypts a plurality of contents with

the sales contracts established and creates trial version

contents with omissions of some functions thereof. Then,

the encrypted contents and the trial version contents are

recorded on a single original CD-ROM (medium). Written to

each contents recorded on the original CD-ROM is a sales

allowable period (which is a content effective period,

i.e., the sales period set in the content) prescribed

based on the contract with the provider 2. Recorded also

on the original CD-ROM during this editing session are a

navigator (which is a software program) executing a series

of processes for decrypting the encrypted contents and an

installer (which is also a software program) for this

navigator. Written further to this original CD-ROM is a

CD-ROM effective period (which is an effective period of

the medium itself) for limiting the sales allowable period

common to all the contents that is recorded on this

original CD-ROM. the operator of the SD center 1, after

performing such editing, requests a CD-ROM publisher 4 to

publish this CD-ROM.

The SD center 1 is connected via a gateway 13 to a

network service company 7. The SD center 1 is connected

via the network service company 7 and a public telephone

network (which is not shown) to a personal computer 6

belonging to a user 5. The SD center 1 transmits, to the

personal computer 6 of the user 5 via the network service

company 7, a buying slit and a content key for decrypting

the content indicated on a purchase slit, in response to

the purchase slit transmitted via the network service

company 7 from the personal computer 6. Also, the SD center 1 issues a demand for payment of the prices of the content sold as described herein above to a charging proxy section 14 of the network service company 7 and collects the money therefrom.

The provider 2 is normally a copyright owner (such as the author) of the content. More specifically, the provider 2 may be a sole copyright owner or a sole creator of a certain content (a so-called primary authored work, secondary authored work, authored film work and authored editing work), all of co-copyright owners or co-creators of a certain content, and all of copyright owners or creators of respective constructive elements of an aggregative authored work. Those are direct copyright owners or creators (so-called modern authors) of the relevant contents. Unless the sales contracts with those copyright owners or creators are entered into, the SD center 1 is not allowed to sell the relevant contents. Each provider 2 has an unique ID (authoring ID).

Other rightful claimants 3 are third parties other than the providers 2 who have a right of directly charging the SD center 1 if the relevant contents are to be copied or who have an obligatory right (right of charge for

running royalty, etc.) against the provider 2 if the contents are copied. A specific example of the former case are copyright owners or creators (so-called classical authors) of original authored works with respect to the secondary (or derivative) authored works and the film authored works, copyright owners or creators of authored works applied to the film authored works, performers of musical authored works and copyright owners or creators of respective constructive elements in the editing authored works. The SD center 1 is prohibited from copying the relevant contents without approval of those copyright owners and therefore must enter into sales contracts with those authors.

Another specific example of the latter case is creators who are not copyright owners but are persons entered into a running royalty payment contract with a copyright owner (provider 2 or copyright owner as applied to the former case) when transferring a right of the work. Each of those other rightful claimants 3 has an unique ID.

The network service company 7 represents an enterpriser or entrepreneur providing network data communications such as personal computer communications but also represents a host computer thereof. The network

service company 7 is, in response to a connection request received from a personal computer 6, connected via the public telephone network (which is not shown in Figure 2) to this personal computer 6 of the user 5 registered with a membership as well as being connected to the SD center 1. Then, the network service company 7 implements a variety of data switching services between the respective personal computers 6 connected thereto and the SD center 1. The user 5 must register his or her own valid credit card number in the network service company 7 by way of a debit of service charge as a prerequisite for the registration of the membership of the network service company 7.

Further, the charging proxy section 14 of the network service company 7, in response to a charge of the content price from the SD center 1, adds an amount of money of this charge to the service using charge of the membership user 5 defined as a content purchaser. Then, the charging proxy section 14 charges a credit card company 8 offering the credit card number being registered in the network service company 7, for the service using charge to which the content price is added. When the credit card company 8 pays the service using charge in response to the above-

mentioned charge, the network service company 7 deducts

the primary service using charge and a predetermined fee

and pays the remainder to the SD center 1.

The credit card company 8 debits the service using

charge charged by the charging proxy section 14 from the

user 5 (more specifically, from an account, such as a bank

account, of the user 5).

The CD-ROM publisher 4 receives an entrustment for

publishing the CD-ROMs form the SD center 1 and mass-

produces the original CD-ROM transferred from the SD

center 1. The CD-ROM publisher 4 sells the thus copied

CD-ROMs 1 to the users 5 or sends the CD-ROMs to the users

5 as registered memberships of the network service company

7 free of charge.

The user 5 loads the CD-ROM 11 obtained from the CD-

ROM publisher 4 into his or her own personal computer 6.

Then, the user 5 executes an installer program stored in

the CD-ROM 11. The installer program installs a navigator

10 onto a hard disk 12 of the personal computer 6 and

generates a machine ID 50 by forming of random numbers,

etc. The installer program then writes this machine ID to

the hard disk 12 of the personal computer 6. The

installer program does not generate a new machine ID 50 if

the machine ID 50 has already been generated in this hard disk 12.

When the navigator 10 is executed within the personal computer 6, the navigator 10 generates a content decryption element 9. Then, the navigator 10, in accordance with a command input by the user 5, enables the user 5 to try out a trial version content within the CD-ROM 1, indicates a list of real contents within the CD-ROM 11 and accepts a request for purchasing a specific content from the user 5. The navigator 10, upon accepting the purchase request from the user 5, creates a purchase slip (text data) for purchasing the content that the user 5 requests to purchase. Also, the navigator 10 is connected to the network service company 7 by executing a communication program (see Figure 2) and is further connected to the SD center 1 via the gateway 13 to transmit the created purchase slip to the SD center 1. Written into this purchase slip are a CD-ROM number (which is unique to every CD-ROM), a content ID (which is unique to every content), an access number generated from the CD-ROM number, the content ID and the machine ID, and an ID (hereinafter referred to as user ID) of the relevant user 5 that is registered in the network service company 7.

When the SD center 1 transmits an encrypted content key
(for demodulating the encrypted content) in response to
the sending of the purchase slip, the navigator 10
decrypts the content key with the machine ID and transfers
the decrypted key to the content decryption element 9.
The content decryption element (corresponding to a
decrypting section and an installing section) 9 reads the
(encrypted) content that the user 5 requested to purchase
out the CD-ROM 11 and decrypts the content with the
content key and installs the decrypted content into the
hard disk (which is a disk device) 12.

<Specific Constructions of Personal Computer 6 and SD
Center 1>

A construction of the personal computer 6, especially
the navigator 10 is explained in detail with reference to
Figure 2. Figure 2 illustrates only the personal computer
6 and the SD center 1 with an omission of illustration of
the network service company 7 intervening therebetween.

As shown in Figure 2, the navigator 10 comprises a
CD-ROM (and contents) effective period determining section
13, an access number generating section 14, a purchase
slip transmitting section 15, a purchase number/period
date separating section 16, a machine data generating

section 17, a comparative checking section 18, a content
key fetching section 19 and an out-of-effective-period
error processing section 20.

A CD-ROM effective period of the CD-ROM 11 loaded in
the personal computer 6 is read by the CD-ROM effective
period determining section 13 serving as an effective
period reading section. Further, a CD-ROM number of this
CD-ROM 11 is read by the access number generating section
14 and the purchase slip transmitting section 15 as well.
On the other hand, the CD-ROM effective period determining
section 13 serving as a sale period reading section reads
a content effective period of a content that the user
requested to purchase among a plurality of contents stored
in the CD-ROM 11. A content ID is read by the access
number generating section 14 and the purchase slip
transmitting section 15, and the content itself is read by
the content decryption element 9.

On the other hand, the machine date generating
section (serving as a present time data generating
section) 17 generates a machine date (which is an item of
present time data indicating a present time) indicating a
present date, month and year and inputs the machine date
to the comparative checking section 18 and the CD-ROM

effective period determining section 13.

The CD-ROM effective period determining section 13 serving as a comparing section compares the machine date with the CD-ROM effective period and the content effective period and checks whether the machine date exceeds the CD-ROM effective period or the content effective period. Then, as far as the machine date exceeds neither the CD-ROM effective period nor the content effective period, the CD-ROM effective period determining section 13 actuates the access number generating section 14. If the machine date exceeds the CD-ROM effective period or the content effective period, the out-of-effective-period error processing section 20 is notified of an out-of-effective-period message.

The thus actuated access number generating section (corresponding to a purchase requesting section) 14 generates an access number by carrying out predetermined arithmetic operations for the CD-ROM number and the content ID that have been read from the CD-ROM 11 and the machine ID. The access number generating section 14 notifies the purchase slip transmitting section 15 of the thus generated access number.

The purchase slip transmitting section 15 creates a

purchase slip in a text date format. Written onto this purchase slip are the access number generated by the access number generating section 14, and the CD-ROM number and the content ID that have been read from the CD-ROM 11. The purchase slip transmitting section 15 transmits the purchase slip written with necessary items to the SD center 1 by executing a communication program 21.

The SD center 1 receives this purchase slip by executing a communication program 30 and inputs the purchase slip to a CD-ROM effective period determining section 31 and a purchase number generating section 33.

The CD-ROM effective period determining section 31 serving as a database reading section refers to a goods master 32 serving as a database on the basis of the CD-ROM number and the content ID that have been written onto the purchase slip. This goods master 32 is a database recorded with a CD-ROM number and a CD-ROM effective period (which is an effective period of the medium itself) of the CD-ROM 11, and a content ID, a sales price, a content effective period (which is a sales period set in the content) and a content key used for decryption of each content that have been written to the CD-ROM 11, for every CD-ROM 11. Note that the CD-ROM effective period and the

content effective period stored in the goods master 32 may be changed (reduced) in consideration of a sales quantity of corresponding content even after starting the sales of the content.

The CD-ROM effective period determining section 31 serving as a judging section, as a result of referring to the goods master 32, reads the CD-ROM effective period corresponding to the CD-ROM number and the content effective period corresponding to the content ID. Subsequently, the CD-ROM effective period determining section 31 compares the read CD-ROM effective period corresponding to the CD-ROM number and the content effective period corresponding to the content ID with the present date. The CD-ROM effective period determining section 31 then checks whether the present date exceeds the CD-ROM effective period or the content effective period. Herein, the reason why the CD-ROM effective period determining section 31 of the SD center 1 checks the same effective period as in the CD-ROM effective period determining section 13 of the personal computer 6 lies in easiness of changing the machine date set in the personal computer 6. To be specific, if the user 5 changes machine date back to a date anterior to the

effective period even after an elapse of the actual CD-ROM

or content effective period, the purchase slip could be

illegally created. Since the SD center 1 can not prevent

such an illegal creation of the purchase slip, there must

be taken a counter measure of rechecking the effective

period on the basis of the sent purchase slip. The CD-ROM

effective period determining section 31 actuates a period

date (time) generating section 34 if the present date

exceeds neither the CD-ROM effective period nor the

content effective period.

On the other hand, the purchase number generating

section 33 performs a predetermined arithmetic operation

(which is backward reckoning of the operation for

generating the access number) for the access number

written onto the purchase slip, thereby restoring the

machine ID unique to the personal computer 6. Further,

the purchase number generating section 33 reads a content

key corresponding to the CD-ROM number and the content ID

written onto the purchase slip from the goods master 32.

Then, the purchase number generating section 33 encrypts

the content key with the machine ID and calculates a

"purchase number" as a result of the encryption. The

purchase number generating section 33 notifies a purchase

number/period date (time) synthesizing section 35 of this "purchase number".

The above-mentioned/period date (time) generating section (corresponding to a period data adding section) 34 generates a "period date and time (period data)" indicating an effective period of the "purchase number". Then, the period date (time) generating section 34 actuates the purchase number/period date (time) synthesizing section 35 and notifies the same section 35 of the "period date and time". Note that the "period date and time" coincides in principle with the CD-ROM effective period or the content effective period. If the present date and time are immediately before the CD-ROM effective period or the content effective period, a date and time after an elapse of a predetermined period since the present date is set as the "period date and time" In such a case, even when the purchase number is generated anterior to the effective period, it may happen that a content decryption and an installation of the content are executed based on the purchase number after the effective period due to a time-consuming operation of the personal computer 6 and some other reasons. Therefore, the "period date and time" is set with some allowance to prevent the

content description and the installation from being

impossible of execution in the case described herein

above.

The purchase number/period date (time) synthesizing

section (corresponding to a key supplying section) 35

synthesizes the "period date and time" and the purchase

number notified from the purchase number generating

section 33 only when actuated by the period date (time)

generating section 34. Then, the combination of the thus

synthesized purchase number and "period date and time" are

sent back to the personal computer 6 through the

communication program 30. Further, the purchase

number/period date (time) synthesizing section 35, if

the present date is posterior to the elapse of the CD-ROM

effective period or the content effective period, sends an

error message indicating the posteriority to the elapse of

the effective period back to the personal computer 6.

Returning to the personal computer 6, the combination

of the purchase number and the "period date and time"

received through the communication program 21 are inputted

to the purchase number/period date separating section 16,

while the error message is inputted to the out-of-

effective-period error processing section 20.

The purchase number/period date separating section 16 separates the received combination of the purchase number and the "period date and time" into the purchase number and the "period date and time", respectively. Then, the purchase number/period date separating section 16 inputs the purchase number to the content key fetching section 19 and the "period date and time" to the comparative checking section 18.

The comparative checking section (corresponding to a second comparing section) 18 compares the "period date and time" receives from the purchase number/period date separating section 16 with a machine date inputted from the machine date generating section 17 and checks whether the machine date exceeds the "period date and time". Then, if the machine date has already exceeded the "period date and time", the out-of-effective-period error processing section 20 is notified of an out-of-effective-period message. Whereas if the machine date does not yet exceed the "period and time", the content key fetching section 19 is actuated.

When notified of the out-of-effective-period message from the CD-ROM effective period determining section 13 or the comparative checking section 18, and when receiving an

error message directly through the communication program 21, the out-of-effective-period error processing section 20 causes a display unit (not shown) connected to the personal computer 6 to indicate that the content can not be purchased because of exceeding the effective period of the content selected by the user 5 or the effective period of the CD-ROM.

The content key fetching section 19 decrypts the received purchase number with the machine ID and fetches the content key. This content key is inputted to the content decryption element 9 and is, as explained herein above, used for decrypting the content read from the CD-ROM 11.

<Purchasing Procedure>

Given next is an explanation of processes executed within the personal computer 6 and the SD center 1 to purchase the content.

Figure 3 shows a control processing program executed by the navigator 10 and the content decryption element 9 within the personal computer 6.

The processing in Figure 3 is started in response to an operation by the user 5. Then, in first step S001, the CD-ROM number written on the CD-ROM 11 loaded in the

personal computer 6 is read. In next step S002, menus

such as a purchase accept menu that are stored in the CD-

ROM 11 are displayed, and there is a wait till the user 5

chooses one of the contents to purchase.

In next step S003, the effective period of the CD-ROM

11 and the effective period of the content selected in

step S002 are checked. Subsequently, if the present

machine date exceeds the effective period of the CD-ROM 11

or the effective period of the content selected in step

S002 (step S004), the processing proceeds to step S014.

Contrastingly, if the present machine date falls

within the effective period of the CD-ROM 11 and within

the effective period of the content selected in step S002

(step S004), the predetermined arithmetic operations is

performed to the CD-ROM number read in step S001, the

content ID of the content selected in step S002 and the

machine ID 50 to generate an access number in step S005.

In step S006, the access number generated in step

S005, the CD-ROM number read in step S001 and the content

ID of the content selected in step S002, are written onto

the purchase slip in the text format and then transmitted

to the SD center 1.

Whether this purchase slip is received by the SD

center 1 is checked in step S101 in the control processing

program, in FIG. 4, executed by the SD center 1.

The SD center 1, upon receiving the purchase slip,

refers to the goods master 32 in step S102. Subsequently,

the SD center 1 reads from the goods master 32 the CD-ROM

effective period corresponding to the CD-ROM number that

is written on the purchase slip and the content effective

period corresponding to the content ID that is written

onto the purchase slip. Then, the SD center 1 checks the

thus read CD-ROM effective period and content effective

period.

If the present date exceeds the effective period of

the CD-ROM 11 or the effective period of the content

selected in step S002 (step S103), the error message is

sent back to the personal computer 6 as a party originally

sending the purchase slip in step S107, and the processing

returns to step S101 to wait for receiving a next purchase

slip.

In contrast with this, if the present date falls both

within the effective period of the CD-ROM 11 and within

the effective period of the content selected in step S002

(step S103), the "period date and time" is generated in

step S104.

In next step S105, the purchase number is generated based on the access number written onto the purchase slip received in step S101.

In next step S106, the "period date and time" generated in step S104 is paired with the purchased number generated in step S105, and the combination thereof is sent back to the personal computer as the party originally sending the purchase slip. Then, the processing returns to step S101 to wait for receiving a next purchase slip.

Whether the combination of the purchase slip and the "period date and time" are received by the personal computer 6 as the party originally sending the purchase slip is checked in step S007 in Figure 3. Then, if the combination of the purchase slip and the "period date and time" are not received, whether the error message transmitted from the SD center 1 is received by the personal computer 6 is checked in step S008. If the error message is received, the processing proceeds to step S014. Whereas if error message is not received, the processing returns to step S007.

On the contrary, it is determined that the combination of the purchase slip and the "period date and time" are received in step S007, the "period date and

time" is compared with the machine date in step S009.

Then, if the "period date and time" are before the machine

date (step S010), the processing goes forward to step

S014.

If the "period date and time" is posterior to the

machine date (step S010), in step S011, the content key is

fetched out of the purchase number received in step S007.

In next step S012, the content selected in step S002

is decrypted with the content key fetched in step S011.

In next step S013, the content decrypted in step S012

is installed into the hard disk 12.

On the other hand, in step S014, an error message

indicating that the content can be neither decrypted nor

installed because of exceeding the effective period of the

loaded CD-ROM itself or the effective period of the

selected content is displayed on the display unit (not

shown) connected to the relevant personal computer 6.

As discussed above, according to the present

embodiment, the personal computer 6 is capable of checking

the effective periods of the CD-ROM and of the content and

rejecting the transmission of the purchase slip in case

one of the effective periods is elapsed. Further, in case

the purchase slip illegally created by changing the

machine date of the personal computer 6 is transmitted to the SD center 1, the SD center 1 is capable of checking by comparing the present date with the effective period recorded on the goods master 32 and rejecting the transmission of the key (which is the purchase number) with respect to the content or the CD-ROM of which effective periods are elapsed. It is to be noted that the SD center 1 may terminate the sales period of the content with a stagnation in sales and the sales period of content just before its version-up because of capable of changing (reducing) effective period recorded on the goods master 32 irrespective of the effective period written to the CD-ROM 11.

Further, the SD center 1 may affixes the "period date and time" prescribed separately from the CD-ROM effective period or the content effective period to the key (which is the purchase number) when sending the key back to the personal computer 6 as the party originally sending the purchase slip. The personal computer 6 checks this "period date and time" and is allowed to decrypt and install only when the machine date is anterior to the "period date and time". Accordingly, even if a purchase slip sending time is in close proximity to the CD-ROM

effective period or the content effective period, a "period date" with an allowance for an operation can be set in the personal computer. Hence, the content can be decrypted and installed during a period up to the "period date".

As discussed above, according to the content sales period verifying system or the content decryption key effective period verifying system of the present invention, the content sales period can be set in the content distribution system for selling the content on line.

A wide range of different working modes can be formed based on the present invention without deviating from the spirit and scope of the present invention. The present invention, therefore, is not restricted by its specific working modes except being limited by the appended charges.

The present invention is not limited to the embodiments, described above, but also encompasses variations thereof.

The many features and advantages of the invention are apparent from the detailed specification and, thus, it is intended by the appended claims to cover all such features

and advantages of the invention which fall within the true spirit and scope of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation illustrated and described, and accordingly all suitable modifications and equivalents may be restored to, falling within the scope of the invention.

WHAT IS CLAIMED IS:

1. A content sales period verifying system in a content distribution system in which a center sells a content in response to a request for purchasing the content given from a terminal,

said terminal comprising:

sales period reading means for reading sales period set on the content;

present time data generating means for generating present time data indicating present time;

comparing means for comparing the sales period read by said sales period reading means with the present time indicated by the present time data generated by said present time data generating means; and

purchase requesting means for requesting said center for purchasing the content when said comparing means judges that the present time falls within the sales period.

2. A content sales period verifying system according to claim 1, wherein said center distributes a single piece of medium storing a plurality of encrypted contents each set with the sales periods thereof and supplies said

terminal having made the request for purchasing one of the contents with a key for decrypting the content.

3. A content sales period verifying system according to claim 2, wherein effective period of said medium itself is set on said medium,

said terminal further comprises effective period reading means for reading the effective period of said medium itself,

said comparing means compares the effective period of said medium itself that is read by said effective period reading means with the present time indicated by the present time data generated by said present time data generating means, and

said purchase requesting means requests said center for purchasing when said comparing means judges that the present time falls within the sales period and is anterior to end of the effective period of said medium itself.

4. A content sales period verifying system according to claim 2, wherein said center comprises:

a database registered with the sales period set on each content;

database reading means for reading the sales period

of the content from said database when said terminal makes

the request for purchasing one of the contents;

determining means for determining whether the present

time falls within the sales period read by said database

reading means; and

key supplying means for supplying said terminal with

a key for decrypting the content when said determining

means determines that the preset time falls within the

sales period.

5. A content sales period verifying system according

to claim 3, wherein said center comprises:

a database registered with the effective period of

said medium itself and the sales period set on each

content;

database reading means for reading the effective

period of said medium itself and the content sales period

from said database;

determining means for determining whether the present

time is anterior to end of the effective period read by

said database reading means, and whether the present time

falls within the sales period read by said database

reading means; and

key supplying means for supplying said terminal with a key for decrypting the content when said determining means determines that the present time is anterior to the end of the effective period and falls within the sales period.

6. A content sales period verifying system according to claim 4, wherein said center further comprising:

period data adding means for generating period data indicating an effective period of the key and adding this item of period data to the key supplied to said terminal, and

said terminal further comprises:

second comparing means for comparing the key effective period indicated by the period data with the present time indicated by the present time data generated by said present time data generating means, and

decrypting means for decrypting the content requested for purchasing when said second comparing means judges that the present time falls within the key effective period.

7. A content sales period verifying system according to claim 6, wherein said terminal further comprises:

a disk device for storing the contents; and

installing means for installing the content decrypted by said decrypting means into said disk device.

8. A content decryption key effective period verifying system in a content distribution system for distributing encrypted contents and supplying terminals making requests for purchasing a content with key for decrypting the content,

a center comprising:

period data adding means for generating period data indicating a key effective period and adding the period data to the key, and

said terminal comprising:

present time data generating means for generating present time data indicating a present time;

comparing means for comparing the key effective period indicated by the period data with the present time indicated by the present time data generated by said present time data generating means; and

decrypting means for decrypting the content requested

for the purchasing when the purchasing when said comparing means judges that the present time falls within the key effective period.

9. A storage device readable by a computer, storing an encrypted content which is set with its sales period and a program of instructions executably by the computer to perform method steps, said steps comprising ;

reading the sales period:

generating present time data indicating present time;

comparing the sales period with the present time indicated by the present time data; and

requesting for purchasing the content when the present time falls within the sales period.

FIG. 1

CENTER — 1

PROVIDER (CONTENT PROVIDER) — 2

CONTENT ACCEPT CONTRACT

ACCEPTING OF CONTENT

SALES CONTRACT

OTHER RIGHTFUL CLAIMANTS

DISTRIBUTION — 3

ENTRUSTING OF PUBLISHING CD-ROM

NETWORK SERVICE COMPANY

GATEWAY

PURCHASE SLIP

KEY

BUYING SLIP

13

CHARGING PROXY SECTION — 14

CHARGING

PAYING

PAYMENT — 7

PERSONAL COMPUTER — 6

MACHINE ID — 50

NAVIGATOR — 10

KEY

ID

CD-ROM — 11

DESCRIPTION ELEMENT — 9

HARD DISK — 12

CHARGING

PAYMENT

CD-ROM PUBLISHER — 4

SELLING OR SENDING TO MEMBERS OF NETWORK SERVICE COMPANY

USER — 5

CHARGING

PAYMENT

CREDIT CARD COMPANY — 8

FIG. 2

FIG. 3

```
                    ( START )
                        │
                        ▼
          ┌──────────────────────────┐
          │    READ CD-ROM NUMBER     │──S001
          └──────────────────────────┘
                        │
                        ▼
          ┌──────────────────────────┐
          │   SELECT TARGET CONTENT   │──S002
          └──────────────────────────┘
                        │
                        ▼
          ┌──────────────────────────┐
          │  CHECK EFFECTIVE PERIOD OF│──S003
          │  CD-ROM AND CONTENT ID    │
          └──────────────────────────┘
                        │
    S004 ╲              ▼
          ◇ CHECK WHETHER              NO
         ╱ TO FALL WITHIN ╲ ─────────────────────────────┐
          ╲ EFFECTIVE PERIOD ╱                           │
                        │                                 │
                      YES                                 │
                        ▼                                 │
          ┌──────────────────────────┐                    │
          │ GENERATE ACCESS NO. FROM  │──S005              │
          │ CD-ROM NUMBER, TARGET     │                    │
          │ CONTENT ID AND MACHINE ID │                    │
          └──────────────────────────┘                    │
                        │                                 │
                        ▼                                 │
          ┌──────────────────────────┐                    │
          │ TRANSMIT PURCHASE SLIP    │──S006              │
          │ WRITTEN WITH ACCESS NO.,  │                    │
          │ CD-ROM NUMBER AND         │                    │
          │ CONTENT ID TO CENTER      │                    │
          └──────────────────────────┘                    │
                        │◄──────────────────────┐         │
    S007 ╲              ▼                        │         │
          ◇ ARE PURCHASE              NO         │         │
         ╱ NUMBER AND PERIOD ╲ ──────────┐       │         │
          ╲ DATE/TIME RECEIVED ╱         │       │         │
          ╲ FROM SD CENTER ? ╱           ▼       │         │
    S009 ╲            │            S008 ╲│       │         │
                    YES              ◇ IS ERROR  NO        │
                      ▼             ╱ MESSAGE ╲ ───────────┘
          ┌──────────────────┐      ╲ RECEIVED FROM ╱      │
          │ COMPARE PERIOD    │       ╲ CENTER ? ╱         │
          │ DATE/TIME WITH    │           │                │
          │ MACHINE DATE      │         YES                │
          └──────────────────┘           │                │
    S010 ╲       │                        │                │
          ◇ DOES MACHINE DATE  NO         │                │
         ╱ COINCIDE WITH OR ╲ ────────────┤                │
          ╲ PRECEDE PERIOD DATE/TIME? ╱   │                │
                    │                     │   S014 ╲       │
                  YES                     ▼                ▼
                    ▼          ┌──────────────────────────┐
          ┌──────────────────┐ │ OUTPUT OUT-OF-           │
          │ FETCH THE        │ │ EFFECTIVE-PERIOD         │
          │ CONTENT KEY      │──S011  ERROR MESSAGE        │
          └──────────────────┘ └──────────────────────────┘
                    │                     │
                    ▼                     │
          ┌──────────────────┐            │
          │ DECRYPT THE      │──S012       │
          │ CONTENT          │            │
          └──────────────────┘            │
                    │                     │
                    ▼                     │
          ┌──────────────────┐            │
          │ INSTALL CONTENT  │──S013       │
          │ INTO HARD DISK   │            │
          └──────────────────┘            │
                    │◄────────────────────┘
                    ▼
                ( END )
```

FIG. 4

```
                    ┌──────────┐
                    │  START   │
                    └────┬─────┘
                         │
    NO        ╱──────────┴──────────╲    ～S101
  ◄───────────   IS PURCHASE          │
              ╲  SLIP RECEIVED ?      ╱
               ╲─────────┬───────────╱
                         │
                       YES
                         │
           ┌─────────────┴─────────────┐
           │ CHECK EFFECTIVE PERIOD OF │
           │ CD-ROM NUMBER AND CONTENT │ ～S102
           │ ID IN GOODS MASTER        │
           └─────────────┬─────────────┘
                         │
   S103                  │
      ╲───────────────────────────────────╲      NO
       ╲    WITHIN EFFECTIVE PERIOD ?       ────────────┐
        ╲─────────────┬─────────────────╱               │
   S104               │                          ┌───────┴──────┐ ～S107
      ╲             YES                          │ SEND ERROR   │
     ┌──────────────┴───────────┐                │ MESSAGE BACK │
     │ GENERATE PERIOD          │                │ TO TERMINAL  │
     │ DATE (TIME)              │                └───────┬──────┘
     └──────────────┬───────────┘                        │
                    │                                     │
     ┌──────────────┴───────────┐                         │
     │ GENERATE PURCHASE        │  ～S105                  │
     │ NUMBER FROM              │                         │
     │ ACCESS NO.               │                         │
     └──────────────┬───────────┘                         │
                    │                                     │
     ┌──────────────┴───────────┐                         │
     │ SEND PURCHASE            │  ～S106                  │
     │ NUMBER BACK TO           │                         │
     │ TERMINAL                 │                         │
     └──────────────┬───────────┘                         │
                    │                                     │
                    └─────────────────────────────────────┘
```
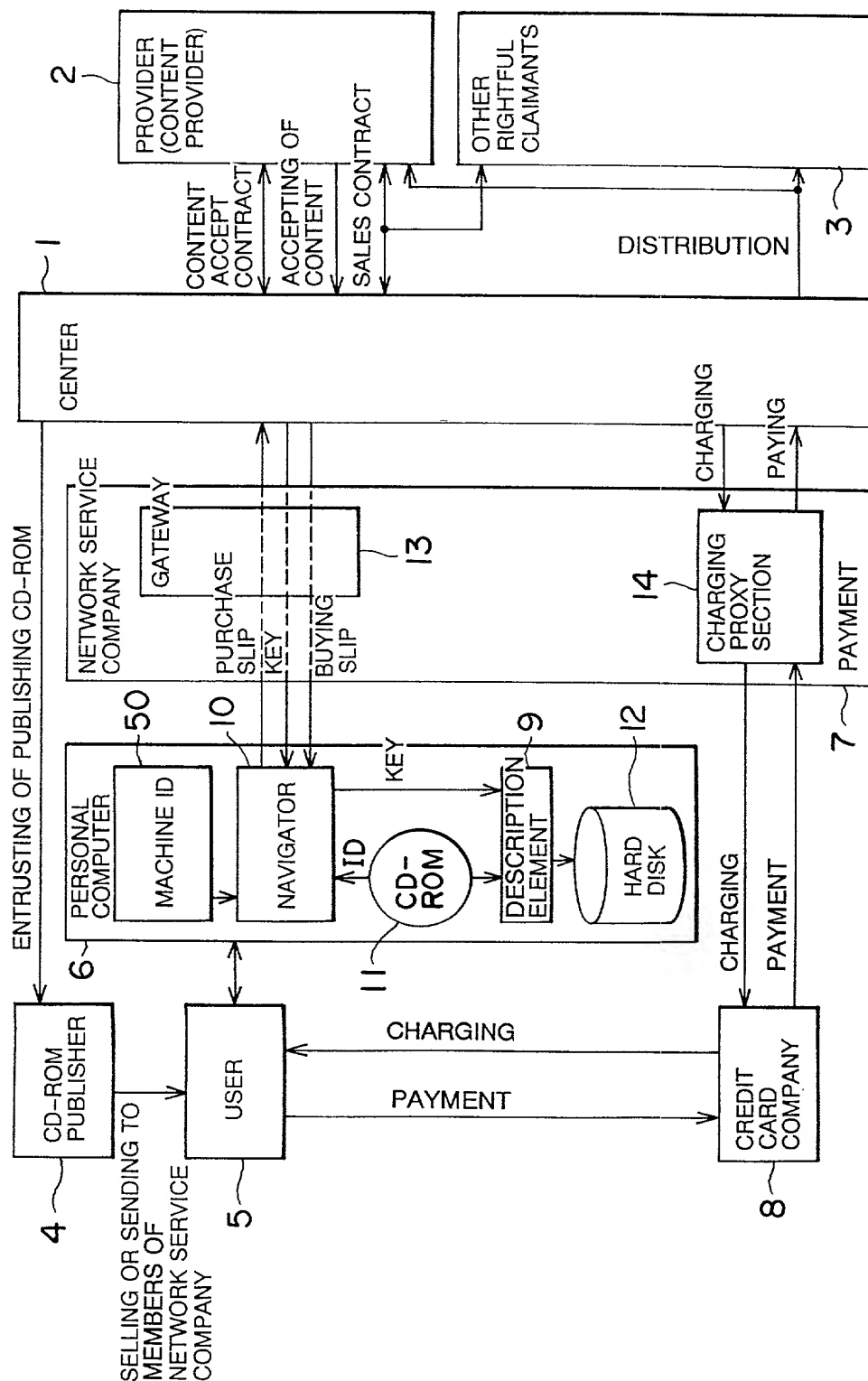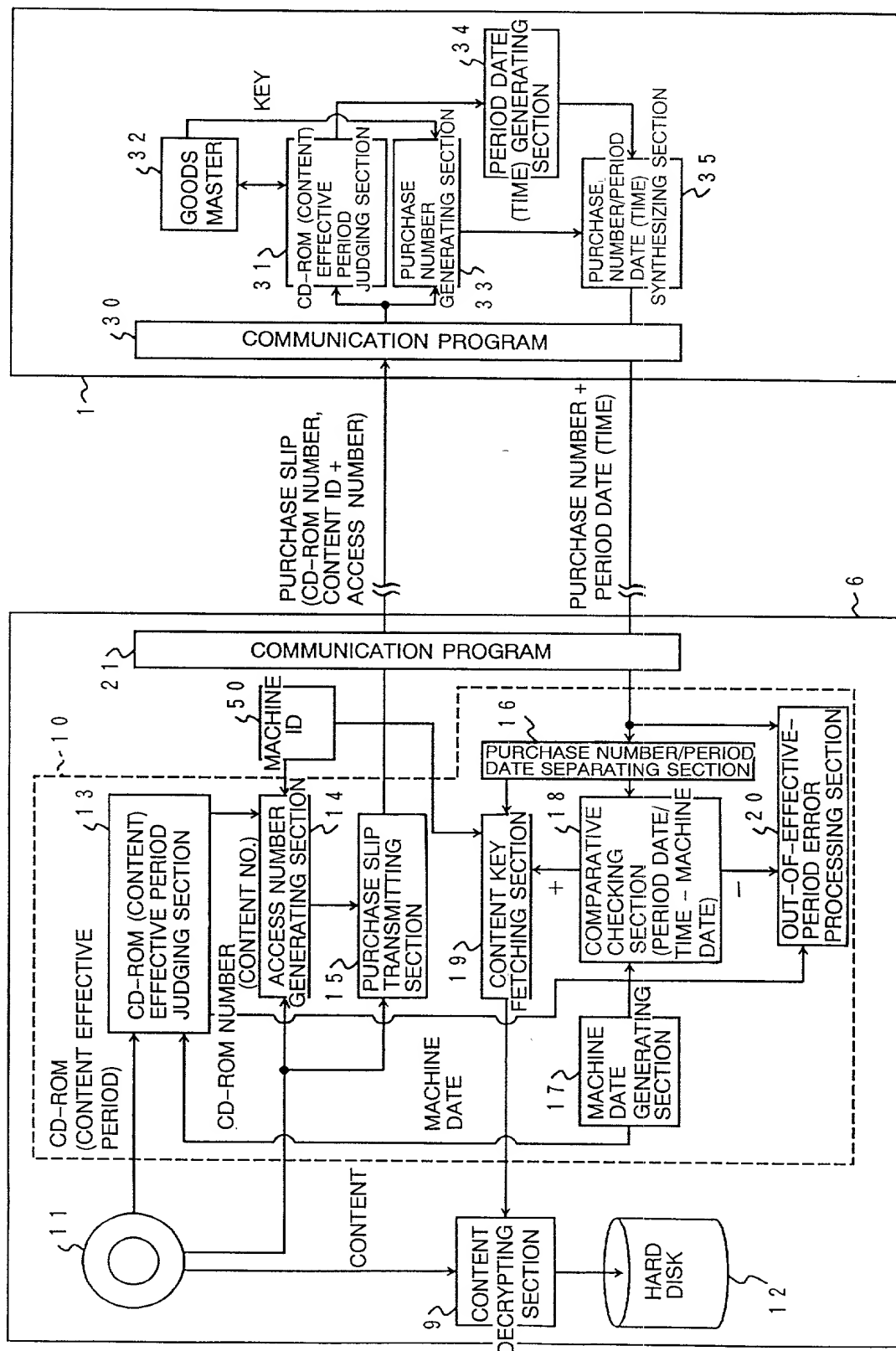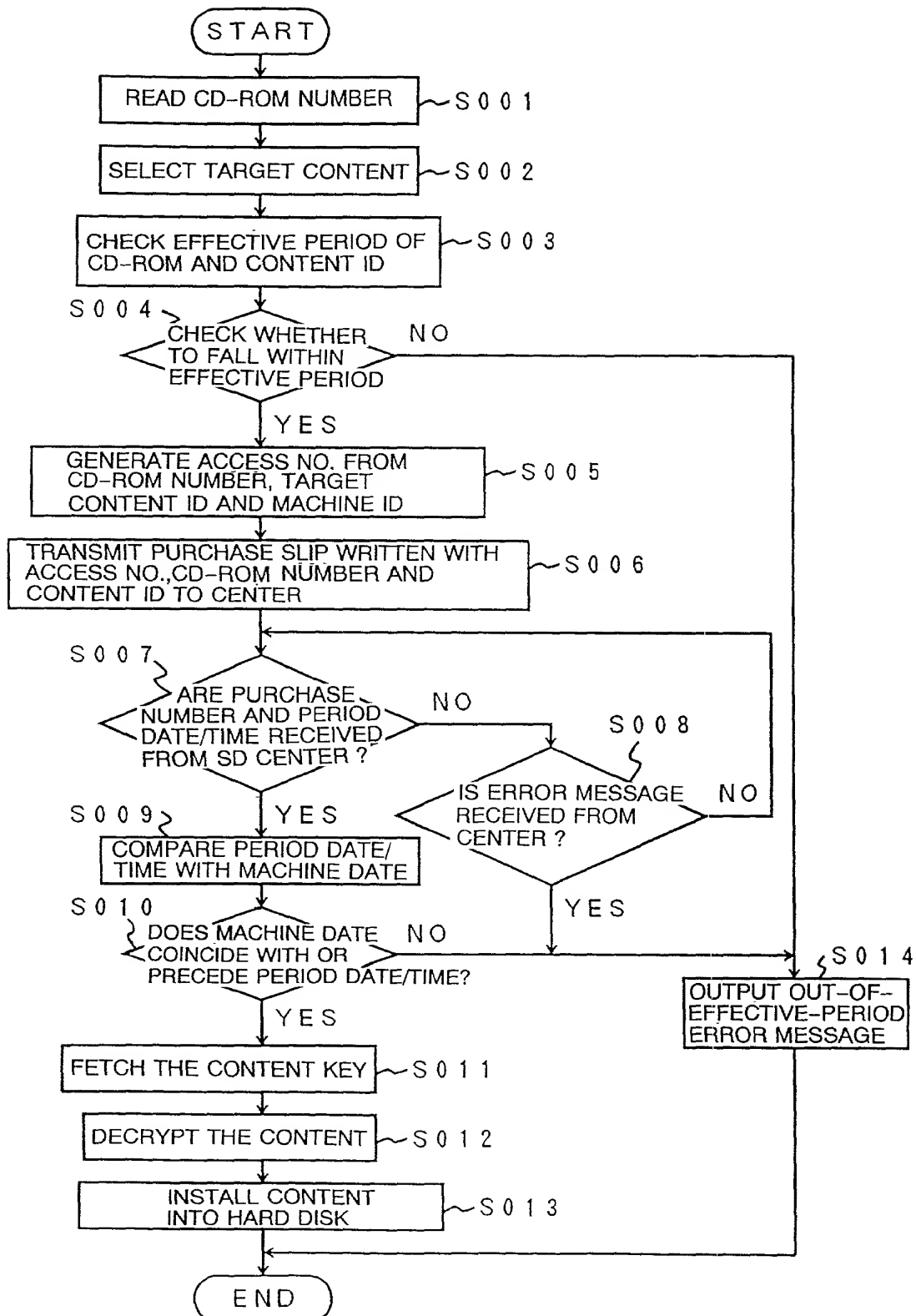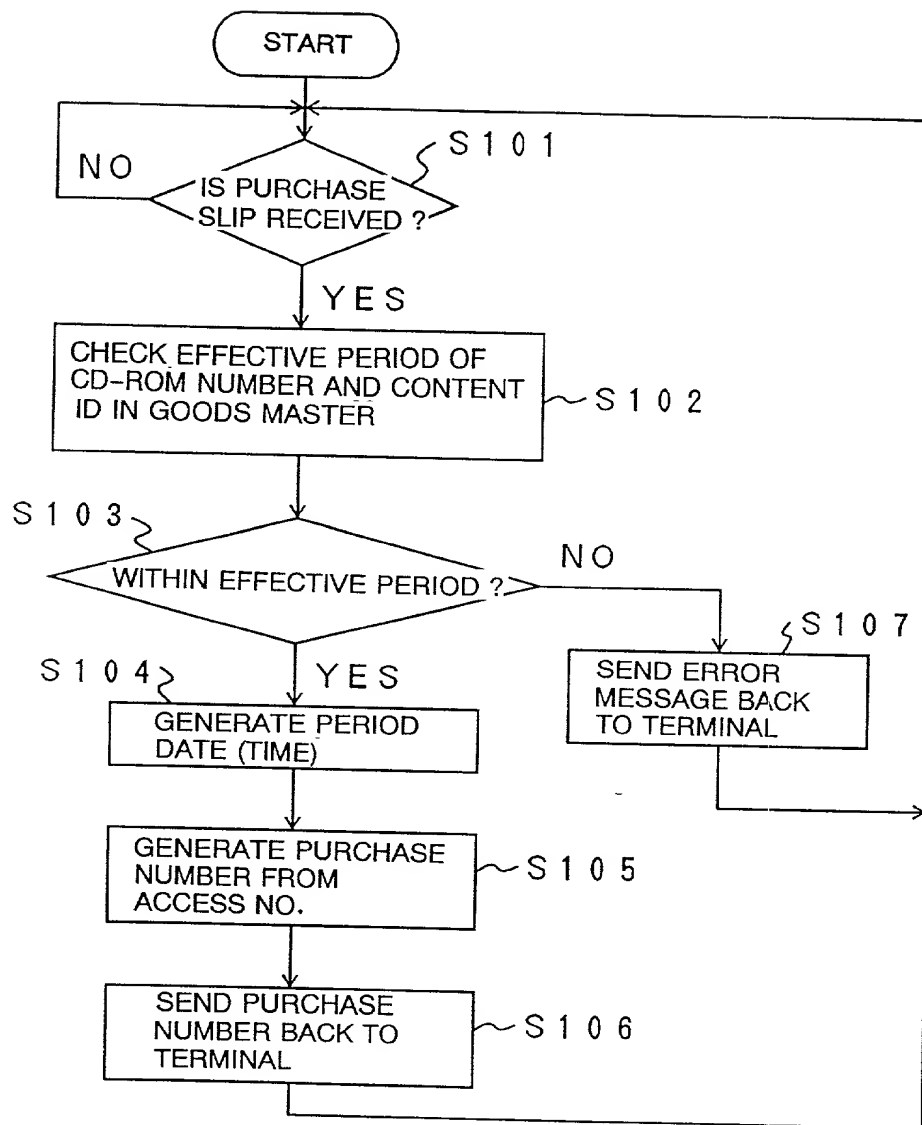
UNITED STATES   Docket No.: _____

COMBINED DECLARATION/POWER OF ATTORNEY FOR UTILITY/DESIGN PATENT APPLICATION

As a below named inventor, I hereby declare that:
My residence, post office address and citizenship are as stated below next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Content Sales Period Verifying System and Content Decryption Key Effective Period Verifying System

the specification of which (check one) [X] is attached hereto [ ] was filed on _____
as U.S. Application Serial No. _____ and was amended on _____ .
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in §1.56. I hereby claim foreign priority benefit(s) under 35 U.S.C. §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)   Priority Claimed

7-242125	Japan	20/09/1995	[X] Yes	[ ] No
(Number)	(Country)	Day/Month/Year Filed		
(Number)	(Country)	Day/Month/Year Filed	[ ] Yes	[ ] No

I hereby claim the benefit under 35 U.S.C. §120 of any U.S. application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorneys and agent: James D. Halsey, Jr., 22,729; Harry John Staas, 22,010; David M. Pitcher, 25,908; John C. Garvey, 28,607; J. Randall Beckers, 30,358; James H. Marsh, Jr., 24,533; William F. Herbert, 31,024; Richard A. Gollhofer, 31,106; Mark J. Henry, 36,162; Paul F. Daebeler, 35,852; Gene M. Garner, II, 34,172; Ilene D. Altman, 36,371; Michael D. Stein, 37,240; Paul I. Kravetz, 35,230; Gerald P. Joyce, III, 37,648; Todd E. Marlette, 35,269; Michael Lau, 39,479; Beverly A. Pawlikowski, 36,404; John P. Kong, 40,054 and William M. Schertler, 35,348 (agent) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. Send correspondence to: STAAS & HALSEY, 700 Eleventh Street, N.W., Suite 500, Washington, D.C., 20001, and direct telephone calls to: (202) 434-1500

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Makoto Yoshioka

Inventor's Signature _Makoto Yoshioka_ Date April 26, 1996

Residence Kawasaki, Kanagawa, Japan

Citizenship Japan

Post Office Address c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa, 211 Japan

Full name of second joint inventor, if any Haruhiko Tsunoda

Second Inventor's Signature _Haruhiko Tsunoda_ Date April 26, 1996

Residence Kawasaki, Kanagawa, Japan

Citizenship Japan

Post Office Address c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa, 211 Japan

UNITED STATES   Docket No.: _____

COMBINED DECLARATION/POWER OF ATTORNEY FOR UTILITY/DESIGN PATENT APPLICATION

Full name of third joint inventor, if any Kazuharu Hasegawa

Inventor's Signature _Kazuharu Hasegawa_   Date _April 26, 1996_

Residence __Kawasaki, Kanagawa, Japan__

Citizenship Japan

Post Office Address c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome, Nakahara-ku, _Kawasaki-shi, Kanagawa, 211 Japan_

Full name fourth joint, inventor, if any Hidefumi Aoe

Inventor's Signature _____   Date _April 26, 1996_

Residence __Kawasaki, Kanagawa, Japan__

Citizenship Japan

Post Office Address c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome, Nakahara-ku, _Kawasaki-shi, Kanagawa, 211 Japan_

Full name of fifth joint inventor, if any _____

Inventor's Signature _____   Date _____

Residence _____

_____ Citizenship _____

Post Office Address _____

Full name sixth joint, inventor, if any _____

Inventor's Signature _____   Date _____

Residence _____

_____ Citizenship _____

Post Office Address _____

Full name of seventh joint inventor, if any _____

Inventor's Signature _____   Date _____

Residence _____

_____ Citizenship _____

Post Office Address _____

Full name eighth joint, inventor, if any _____

Inventor's Signature _____   Date _____

Residence _____

_____ Citizenship _____

Post Office Address _____